Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in

the application:

Listing of Claims:

Claim 1 – 11. **(Cancelled)**

12.   **(New)**   Method for detecting chemical and/or biological searched

elements in a gas to be analysed, said method comprising:

- mixing said gas with a gaseous comburent to have a gaseous mixture;

- burning said mixture to produce a flame which emits a light;

- focusing said light at the opening of a spectrophotometry assembly which
  generates a radiation spectrum from said light and which converts said
  spectrum into a set of spectrum data concerning at least a plurality of
  variables relative to the searched elements;

- modelling of a "so called" bottom of the flame which defines modelling data
  relative to radiation generated by the flame in absence of the searched
  elements;

- subtracting said modelling data from said spectrum data to obtain extracted
  data;

- filtering said extracted data through a Butterworth recursive linear filter;

- standardising said filtered extracted data by representing said variables in the
  form of reduced centre matrix;

- determining a level of said variables from said reduced centre matrix and detecting an enhancement when said level is superior to a predetermined level, said enhancement indicating the presence of a spectrum of said searched elements;

- projecting said specific spectrum on all the projection axis and estimating the parameters of said specific spectrum;

- evaluating a potential of affiliation of said specific spectrum in relation to different spectrum groups previously processed;

- if the potential of affiliation of the specific spectrum is greater than a pre-set threshold repeating the preceding steps so as to obtain at least a group of specific spectrum with its potential of affiliation;

- calculating the frequency of appearances of the searched elements in said groups;

- emitting a warning signal when said frequency is superior to a warning level;

- repeating the preceding steps;

- detecting the number of warning signals;

- identifying the searched elements in the gas when said number is greater than a pre-set threshold.

13.   **(New)**   Method according to claim 12 further comprising, if the potential of affiliation of the specific spectrum is less than a pre-set rejection threshold, a step of agglomerating the specific spectrum with one of the said groups in order to create a new group.